Remarks

I. The Amendment to the Claims

In order to place the application in better form for interference, please cancel without prejudice claims 28-40 and 50-53, leaving claims 41-49 pending, and please amend claims 45- 48, as shown above.

II. The Counts

The Office communication states:

> 2. Applicant failed to (1) identify all claims the applicant believes interfere, and/or (2) propose one or more counts, and/or (3) show how the claims correspond to one or more counts. See 37 CFR 41.202(a)(2) and MPEP § 2304.02(b).
> 2.1. The applicant should provide a two-way obviousness analysis to show how the claims (37-53) correspond to a count taking into consideration that each count must describe a patentably distinct invention (the pending claims 37-53 are not all distinct inventions that correspond to different counts i.e. each count of the pending application is not a patentably distinct invention), see CFR 41.207(b)2.

A. Identification of Interfering Claims

Applicants submit that the following claims interfere with claims 1-9 of the '683 patent:

Pending claims 41-49.

B. Proposed Counts

In the Preliminary Amendment of June 12, 2002, applicants proposed nine counts, the counts corresponding exactly to claims 28-35 that were then newly presented, the nine counts also corresponding exactly to claims 1-9 of the '683 patent, written in independent form. Upon consideration of the requirement that each count must correspond to a patentably distinct invention, applicants instead propose the following three counts:

Count 1. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising:

receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet;

determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer.

Count 2. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising:

receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet;

determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer;

including prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer.

Count 3. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising:

receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet;

determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer;

wherein the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length greater than the maximum packet size for the medium.

C. Comparison of at least One Claim of Each Party to Each Count

Count 1 above is the same as claim 1 of the '683 patent, except that the term "communication control information" is substituted for the term "flow specification" of the claim. Count 1 above is also the same as claim 41 of the present application, except that the term "communication control information" is substituted for the term "transmit control block (TCB)" of the claim.

Count 2 above is the same as claim 4 of the '683 patent written in independent form, except that the term "communication control information" is substituted for the term "flow specification" of the claim, and the definite article "the" preceding the term "plurality of packets" in claim 4 is replaced with the indefinite article "a." Count 2 above is also the same as claim 44 of the '683 patent written in independent form, except that the term "communication control information" is substituted for the term "transmit control block (TCB)" of the claim.

Count 3 above is the same as claim 5 of the '683 patent written in independent form, except that the term "communication control information" is substituted for the term "flow specification" of the claims, and the term "potentially" is deleted in the Count. Count 3 above is also the same as claim 45 of the '683 patent written in independent form, except that the term "communication control information" is substituted for the term "transmit control block (TCB)" of the claim.

D. Showing of Claim Correspondence to Counts

The table on the following page shows how the claims in the present application and those of the '683 patent correspond to the Counts.

Claim Correspondence to Counts

Count Number	Claims in the '683 patent that correspond to the count	Claims in the application that correspond to the count
Count 1	Claims 1-3	Claims 41-43
Count 2	Claims 4, 7	Claims 44 and 47
Count 3	Claims 5, 6, 8 and 9	Claims 45, 46, 48 and 49

III. Comparison of Each Party's Claims and the Counts

The Office communication states:

> 3. Applicant failed to provide a claim chart comparing at least one claim of each party corresponding to the count. See 37 CFR 41.202(a)(3) and MPEP § 2304.02(c).
> 3.1 The applicant should provide for each count, a claim chart comparing at least one claim of each party corresponding to the count and show why the claims interfere within the meaning of 37 CFR 41.203(a).

Applicants below submit a claim chart comparing claims 1-9 of the '683 patent with the Counts, as well as a claim chart comparing claims 41-49 of the present application with the Counts, as well as a claim chart showing why the claims interfere within the meaning of 37 CFR 41.203(a).

A. Claim Chart Comparing Claims 1-9 of the '683 Patent with the Counts

Applicants submit the following claim chart comparing claims 1-9 of the '683 patent with the Counts.

'683 Patent Claim Correspondence to Counts

Count	Claims in the '683 patent that correspond to the Count
Count 1. A method for transferring data on a network from a data source	1. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least

to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer.	one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer. Claim 1 is identical to Count 1, except for the term "communication control information" in the Count compared with the term "flow specification" in the claim. Applicants submit that Count 1 would have anticipated or rendered obvious claim 1, and vice-versa. For example, claim 9, which depends from claim 8, which depends from claim 1, defines that the "flow specification" includes "IP source and destination addresses and TCP port numbers" and "a sequence number for the block of data," which is "communication control information." The specification for the '683 patent also supports this definition (see, e.g., column 5, lines 8-15).
	2. The method of claim 1, wherein the control field in the packet includes a packet header. Applicants submit that Count 1 would have rendered obvious claim 2, because a person having ordinary skill in the art would have thought that a "control field identifying a packet" would commonly be a "packet header."
	3. The method of claim 1, wherein the multi-layer network protocol comprises TCP/IP, and the control field comprises a TCP/IP header. Applicants submit that Count 1 would have rendered obvious claim 3, because TCP/IP was a common network protocol and header type.
Count 2. A method for transferring data on a network from a data source to an end station executing a multi-layer network	4. The method of claim 1, including prior to receiving the packet, allocating the target buffer for the plurality of packets, and notifying the network interface of the allocated target buffer.

protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer; including prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer.	Claim 4, written in independent form to include the limitations of claim 1, is essentially identical to Count 2, except for the term "communication control information" in the Count compared with the term "flow specification" in the claim. Applicants point out that claim 4 also has the definite article "the" preceding the term "plurality of packets," whereas Count 2 instead has the indefinite article "a" preceding the term "plurality of packets." Applicants submit that Count 2 would have anticipated or rendered obvious claim 4, and vice-versa.
	7. The method of claim 6, wherein the network protocol comprises TCP/IP, and the flow specification includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer. Applicants note that claim 7 depends from claim 6, but claim 6 lacks antecedent basis for the term "the plurality of packets," which is found instead in claim 4. Claim 7, written in independent form to include the limitations of claim 4, is similar to Count 2, but rewritten claim 7 also includes the limitation "wherein the network protocol comprises TCP/IP, and the flow specification includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer."

	TCP/IP is a common network protocol, and a "sequence number of a first byte from the plurality of packets" is a way of identifying the data for the target buffer. Applicants submit that Count 2 may have rendered obvious claim 7.
Count 3. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer; wherein the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length potentially greater than the maximum packet size for the medium.	5. The method of claim 1, the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length potentially greater than the maximum packet size for the medium. Claim 5, written in independent form to include the limitations of claim 1, is essentially identical to Count 3, except for the term "communication control information" in the Count compared with the term "flow specification" in the claim. Applicants submit that Count 3 would have anticipated or rendered obvious claim 5, and vice-versa.

	6. The method of claim 5, including notifying the network interface in response to the request of a flow specification for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the flow specification. Claim 6, written in independent form to include the limitations of claim 5, is similar to Count 3, but rewritten claim 6 also includes the limitation "including notifying the network interface in response to the request of a flow specification for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the flow specification." Applicants submit that Count 3 may have rendered obvious claim 6, because Count 3 recites "determining based on the control field in the network interface whether the packet matches communication control information," whereas claim 6 recites "notifying the network interface …of a flow specification," and Count 3 recites "whether the packet matches communication control information," whereas claim 6 recites "identifying packet using the flow specification."
	8. The method of claim 1, wherein the flow specification includes a sequence number for the block of data. Applicants note that claim 8 depends from claim 1, but claim 1 lacks antecedent basis for the term "the block of data," which is found instead in claim 5. Claim 8, written in independent form to include the limitations of claim 5, is similar to Count 3, but rewritten claim 8 also includes the limitation "wherein the flow specification includes a sequence number for the block of data." Applicants submit that Count 3 may have rendered obvious claim 8, because some data flow is known to be identified by sequence numbers.
	9. The method of claim 8, wherein the flow specification includes IP source and destination addresses and TCP port numbers.

	Claim 9, written in independent form to include the limitations of claims 5 and 8, is similar to Count 3, but rewritten claim 9 also includes the limitation "wherein the TCB includes IP source and destination addresses and TCP port numbers." Applicants submit that Count 3 may have rendered obvious claim 9, because TCP maintains a control block that includes IP source and destination addresses and TCP port numbers.

B. Claim Chart Comparing Pending Claims 41-49 with the Counts

Applicants submit the following claim chart comparing pending claims 41-49 with the Counts.

Pending Claim Correspondence to Counts

Count	Claims in the present application that correspond to the Count
Count 1. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data	41. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches a transmit control block (TCB), and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer. Claim 41 is identical to Count 1, except for the term "communication control information" in the Count compared with the term "transmit control block (TCB)" in the claim. Applicants submit that Count 1 would have anticipated or rendered obvious claim 41, and vice-versa. For example, claim 49, which depends indirectly from claim 41, defines

payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer.	that the "TCB" includes "IP source and destination addresses and TCP port numbers" and "a sequence number for the block of data," which are "communication control information."
	42. The method of claim 41, wherein the control field in the packet includes a packet header. Applicants submit that Count 1 would have rendered obvious claim 42, because a person having ordinary skill in the art would have thought that a "control field identifying a packet" would commonly be a "packet header."
	43. The method of claim 41, wherein the multi-layer network protocol comprises TCP/IP, and the control field comprises a TCP/IP header. Applicants submit that Count 1 would have rendered obvious claim 43, because TCP/IP was a common network protocol and header type.
Count 2. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer	44. The method of claim 41, including prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer. Claim 4, written in independent form to include the limitations of claim 41, is essentially identical to Count 2, except for the term "communication control information" in the Count compared with the term "TCB" in the claim. Applicants submit that Count 2 would have anticipated or rendered obvious claim 44, and vice-versa.

assigned by a process at a layer higher than the network layer; including prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer.	
	47. The method of claim 44, wherein the network protocol comprises TCP/IP, and the TCB includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer. Claim 47, written in independent form to include the limitations of claim 44, is similar to Count 2, but rewritten claim 47 also includes the limitation "wherein the network protocol comprises TCP/IP, and the TCB includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer." TCP/IP is a common network protocol, and a "sequence number of a first byte from the plurality of packets" is a way of identifying the data for the target buffer. Applicants submit that Count 2 may have rendered obvious claim 47.
Count 3. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet;	45. The method of claim 41, the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length greater than the maximum packet size for the medium. Claim 45, written in independent form to include the limitations of claim 41, is essentially identical to Count 3, except for the term "communication control information" in the Count compared with the term "TCB" in the claim. Applicants submit that Count 3 would have anticipated or rendered obvious claim 45, and vice-versa.

determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer; wherein the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length potentially greater than the maximum packet size for the medium.	
	46. The method of claim 45, including notifying the network interface in response to the request of the TCB for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the TCB. Claim 46, written in independent form to include the limitations of claim 45, is similar to Count 3, but rewritten claim 46 also includes the limitation "including notifying the network interface in response to the request of a TCB for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the TCB." Applicants submit that Count 3 may have rendered obvious claim 46, because Count 3 recites "determining based on the control field in the network interface whether the packet matches communication control information," whereas claim 46 recites "notifying the network interface …of a TCB," and Count 3 recites "whether the packet matches communication control information," whereas claim 6 recites "identifying packet using the TCB."

	48. The method of claim 45, wherein the TCB includes a sequence number for the block of data. Claim 48, written in independent form to include the limitations of claim 45, is similar to Count 3, but rewritten claim 48 also includes the limitation "wherein the TCB includes a sequence number for the block of data." Applicants submit that Count 3 may have rendered obvious claim 48, because some communication data is known to be identified by sequence numbers.
	49. The method of claim 8, wherein the TCB includes IP source and destination addresses and TCP port numbers. Claim 49, written in independent form to include the limitations of claims 45 and 48, is similar to Count 3, but rewritten claim 49 also includes the limitation "wherein the TCB includes IP source and destination addresses and TCP port numbers." Applicants submit that Count 3 may have rendered obvious claim 49, because TCP maintains a control block that includes IP source and destination addresses and TCP port numbers.

C. Claim Chart Showing Why Pending Claims 41-49 Interfere With Claims 1-9 of the '683 Patent

Applicants submit the following claim chart comparing pending claims 41-49 with claims 1-9 of the '683 patent.

'683 Patent Claim Correspondence to Counts

Pending Claim	Claim in the '683 Patent
41. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a	1. A method for transferring data on a network from a data source to an end station executing a multi-layer network protocol, including a network layer and at least one higher layer, through a network interface on the end station, comprising: receiving in the network interface a packet which carries a data payload from a

block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches a transmit control block (TCB), and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer.	block of data in the data source, and a control field identifying the packet; determining based on the control field in the network interface whether the packet matches communication control information, and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer. Pending claim 41 is identical to claim 1 of the '683 patent, except for the term "transmit control block (TCB)" in claim 41 compared with the term "flow specification" in claim 1. Applicants submit that pending claim 41 would have rendered obvious claim 1 of the '683 patent. For example, claim 49, which depends indirectly from claim 41, defines that the "TCB" includes "IP source and destination addresses and TCP port numbers," and claim 9, which depends indirectly from claim 1, defines that the "flow specification" includes "IP source and destination addresses and TCP port numbers."
42. The method of claim 41, wherein the control field in the packet includes a packet header.	2. The method of claim 1, wherein the control field in the packet includes a packet header. Applicants submit that pending claim 42 would have rendered obvious claim 2 of the '683 patent.
43. The method of claim 41, wherein the multi-layer network protocol comprises TCP/IP, and the control field comprises a TCP/IP header.	3. The method of claim 1, wherein the multi-layer network protocol comprises TCP/IP, and the control field comprises a TCP/IP header. Applicants submit that pending claim 43 would have rendered obvious claim 3 of the '683 patent.
44. The method of claim 41, including	4. The method of claim 1, including prior

prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer.	to receiving the packet, allocating the target buffer for the plurality of packets, and notifying the network interface of the allocated target buffer. Applicants submit that pending claim 44 would have rendered obvious claim 4 of the '683 patent.
45. The method of claim 41, the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length greater than the maximum packet size for the medium.	5. The method of claim 1, the network interface is coupled to a network medium supporting a maximum packet size, and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length potentially greater than the maximum packet size for the medium. Applicants submit that pending claim 45 would have rendered obvious claim 5 of the '683 patent.
46. The method of claim 45, including notifying the network interface in response to the request of a TCB for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the TCB.	6. The method of claim 5, including notifying the network interface in response to the request of the flow specification for the block of data according to the multi-layer network protocol, and wherein the step of receiving the packet includes identifying packet using the flow specification. Applicants submit that pending claim 46 would have rendered obvious claim 6 of the '683 patent.
47. The method of claim 44, wherein the network protocol comprises TCP/IP, and the TCB includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer.	7. The method of claim 6, wherein the network protocol comprises TCP/IP, and the flow specification includes a sequence number of a first byte from the plurality of packets to be stored in the target buffer. Applicants submit that pending claim 47 would have rendered obvious claim 7 of the '683 patent.
48. The method of claim 45, wherein the	8. The method of claim 1, wherein the

TCB includes a sequence number for the block of data.	flow specification includes a sequence number for the block of data. Applicants submit that pending claim 48 would have rendered obvious claim 8 of the '683 patent.
49. The method of claim 8, wherein the TCB includes IP source and destination addresses and TCP port numbers.	9. The method of claim 8, wherein the flow specification includes IP source and destination addresses and TCP port numbers. Applicants submit that pending claim 49 would have rendered obvious claim 9 of the '683 patent.

IV. Detailed Explanation why Applicants Will Prevail on Priority

The Office communication states:

> 4. Applicant failed to provide a detailed explanation as to why applicant will prevail on priority. See 37 CFR 41.202(a)(4), (a)(6), (d) and MPEP § 2304.02(c).
> 4.1. The applicant should explain in details why the applicant will prevail on priority.

Applicants note that the instant application number 09/692,561 is a continuation of application number 09/067,544, which was filed April 27, 1998, several days prior to the filing date of the '683 patent. The present application also incorporates by reference parent application number 09/067,544. Because applicants are entitled to the benefit of filing date of parent application number 09/067,544 under 37 CFR §1.601(g), applicants are the Senior Party according to 37 CFR §41.201 and are entitled to the presumption of priority under 37 CFR §41.207(a)(1).

Applicants also point out that the instant application number 09/692,561, as well as parent application number 09/067,544, claim priority from provisional application number 60/061,809, which was filed October 14,1997, more than six months prior to the filing date of the '683 patent. Moreover, applicants note that both the instant application number 09/692,561 and parent application number 09/067,544 incorporate by reference

provisional application number 60/061,809. Because applicants are entitled to the benefit of filing date of provisional application number 60/061,809 under 37 CFR §1.601(g), applicants are the Senior Party according to 37 CFR §41.201 and are entitled to the presumption of priority under 37 CFR §41.207(a)(1).

Applicants show in detail below why each of interfering claims 41-49 is entitled to the benefit of the filing date of parent application number 09/067,544, as well as being entitled to the benefit of the filing date of provisional application number 60/061,809. In the following claim chart, applicants list disclosures in applicants' applications that provide support for the pending claims. For convenience, the present application is labeled A1, parent application number 09/067,544 is labeled A2, and provisional application number 60/061,809 is labeled A3. Because A1 is a continuation of A2 and has an identical specification (and incorporates by reference A2), aside from a shifting of line numbers due to an extra priority claim at the beginning of A2, for clarity and simplicity applicants will not, in the following claim chart, list disclosures in A1 that are essentially redundant with those of A2.

Detailed Showing of Support in Earlier Applications for the Pending Claims

Pending Claims	Disclosure in Applicants' Applications
41. (New) A method for transferring data on a network from a data source to an end station	[A2, page 7, line 8 through page 8, line 8] Figures 1-8 relate to a "first embodiment". [A2, page 9, Fig. 1, and lines 2-8] In Fig. 1, remote host 22 is a data source; and host 20 is an end station. Host 20 includes a CPU 28 and a CPD 30. As illustrated, CPD 30 interfaces host 20 to network 25. [A3, page 2, lines 36-37] "A 64k SMB request (write or read-reply) is typically made up of 44 TCP segments when running over Ethernet" [A3, page 3, lines 34-35] "Alacritech was formed with the idea that the network processing described above could be offloaded onto a cost-effective Intelligent Network Interface Card (INIC)." [A3, page 4, lines 18-19] Source IP address denotes a data source. [A3, page 6, lines 1-20] The figure shows an end station.
executing a multi-layer network protocol, including a network layer and at least one higher layer,	[A2, page 9, lines 13-15] CPU 28 of host 20 executes a protocol processing "stack" 44. The "stack 44" includes a "network layer" 38 and a "transport layer" 40. [A3, page 6] The figure shows a multi-layer network protocol, including a network layer and at least one higher layer. [A3, page 18, lines 22-26] "This section outlines the design specification for the Alacritech TCP (ATCP) transport driver. The ATCP driver consists of three components: 1. The bulk of the protocol stack is based on the FreeBSD TCP/IP protocol stack. This code performs the Ethernet, ARP, IP, ICMP, and (slow path) TCP processing for the driver..."
through a network interface on the end station, comprising:	[A2, FIG. 1] CPD 30 interfaces host 20 to network 25. [A3, page 6] The figure shows the INIC interfacing the end station to the Ethernet

	network.
receiving in the network interface a packet which carries a data payload from a block of data in the data source, and a control field identifying the packet;	[A2, page 11, lines 14-18] A "TCP/IP message" is "received by the host from the network" in the form of many separate "frames" or "packets" (an initial packet, and subsequent packets). [A2, page 4, line 20-23] "Each layer of the receiving host recognizes and manipulates only the headers associated with that layer, since to that layer the higher layer control data is included with and indistinguishable from the payload data." [A2, page 15, lines 4-6] One of the "subsequent packets" is received from network 25 by CPD 30. This packet includes a "packet header" and "data". [A2, page 12, lines 1-3] "...each packet conventionally includes a portion of data being transferred, as well as headers for each of the protocol layers and markers for positioning the packet relative to the rest of the packets of this message". [A3, page 2, lines 36-37] "A 64k SMB request (write or read-reply) is typically made up of 44 TCP segments when running over Ethernet" [USP 6,246,683, column 2, lines 59-65] "the process for requesting the transfer of a file from a data source involves issuing a read request according to higher layer protocol, such as the READ RAW SMB (server message block) command specified according to the Common Internet File System protocol (See, paragraph 3.9.35 of CIFS/1.0 draft dated Jun. 13, 1996) executed in Windows platforms." [A3, page 2, lines 29-30] " The TCP connection object must be located when a given TCP segment arrives, IP header checksums must be calculated..."
determining based on the control field in the network interface	[A2, page 15, lines 4-12] The packet "header" of the subsequent packet is "parsed to create a summary of the message packet and a hash for finding a corresponding CCB..." [A3, page 4, lines 1-10] NIC processes IP and TCP headers. [A3, page 7, lines 13-16] "When a frame is received by the INIC, it must verify it completely before it even determines whether it belongs to one of its TCBs or not. This includes all header validation (is it IP, IPV4 or V6, is the IP header checksum correct, is the TCP checksum correct, etc)."
whether the packet matches a transmit control block (TCB),	The term "TCB" corresponds to the term "CCB" as the term is used in [A2]. [A2, page 24, lines 13-18] "A CCB includes connection and state information regarding the protocol layers and packets of the message. Thus a CCB can include source and destination media access control (MAC) addresses, source and destination IP or IPX addresses, source and destination TCP or SPX ports, TCP variables such as timers, receive and transmit windows for sliding window protocols, and information denoting the session layer protocol". [A2, page 15, lines 9-12] " The processor 55 checks for a ***match*** between the hash and each CCB that is stored in the cache 62 and, finding a match, sends the ***data*** (D2) 70 via a fast-path ***directly to the destination*** in storage 35,..." (emphasis added). [A3, page 2, lines 13-18] "When a frame is received by the INIC, it must verify it completely before it even determines whether it belongs to one of its TCBs or not. This includes all header validation (is it IP, IPV4 or V6, is the IP header checksum correct, is the TCP checksum correct, etc). Once this is done it must compare the source and destination IP address and the source and destination TCP port with those in each of its TCBs to determine if it is associated with one of its TCBs." [A3, page 7, lines 16-18] "Once this is done it must compare the source and destination IP address and the source and destination TCP port with those in each of its TCBs to determine if it is associated with one of its TCBs."
and if so transferring the data payload in the packet directly to a target buffer assigned by a process at a layer higher than the network layer.	[A2, page 12, line 21 through page 13, line 5] "All received message frames which have been determined by the CPD hardware assist to be fast-path candidates are examined 53 by the network microprocessor on INIC comparitor circuits to ***determine*** whether they ***match*** a CCB held by the CPD. Upon confirming such a match, the CPD removes lower

	layer headers and sends 69 the remaining application ***data*** from the frame ***directly into its final destination in the host*** using direct memory access (DMA) units of the CPD. This operation may occur immediately upon receipt of a message packet, for example when a TCP connection already exists..." (emphasis added). [A2, page 18, lines 2-3] The "***application*** layer 166...***provides a*** source or ***destination*** 168 for the communication data..." [A3, page 3, lines 38-39] "The vast majority of the data is moved directly from the INIC into its final destination. A single trip across the system memory bus." [A3, page 7, lines 38-39] A received frame's source and destination IP addresses and source and destination TCP ports are parsed by the INIC to see if it matches a TCB. [A3, page 7, line 42 – page 8, line 44] Landing the received data in its final destination, which is a target buffer on the host, is accomplished by passing a upper layer header to the host NetBIOS or other upper layer protocol, which returns a memory address that the INIC uses to DMA the remainder of the data into as it arrives in packets on the INIC that match the TCB. [A3, page 8, lines 9-12] "When this small amount of data is passed up to the client, and it returns with the address in which to put the remainder of the data, our host transport driver will pass that address to the INIC which will DMA the remainder of the data into its final destination." [A3, page 11, lines 5-34] see entire Fast-path 56k NetBIOS session message example. "When the INIC receives the command buffer, it will DMA the remainder of the NetBIOS data, as it is received, into the memory address or addresses designated by the host."
42. The method of Claim 41, wherein the control field is a packet header.	[A2, page 13, line 1] "Upon confirming such a match, the CPD removes lower layer ***headers*** and sends 69 the remaining application data from the frame directly into its final destination in the host ..." [A3, page 7, lines 13-14] "When a frame is received by the INIC, it must verify it completely before it even determines whether it belongs to one of its TCBs or not. This includes all header validation (is it IP, IPV4 or V6, is the IP header checksum correct, is the TCP checksum correct, etc)."
43. The method of claim 41, wherein the multi-layer network protocol comprises TCP/IP, and the control field comprises a TCP/IP header.	[A2, page 11, line 15] The message being received by the host is a "TCP/IP message". [A3, page 18, lines 22-26] "This section outlines the design specification for the Alacritech TCP (ATCP) transport driver. The ATCP driver consists of three components: 1. The bulk of the protocol stack is based on the FreeBSD TCP/IP protocol stack. This code performs the Ethernet, ARP, IP, ICMP, and (slow path) TCP processing for the driver..." [A2, page 12, lines 1-3] "...each packet conventionally includes a portion of the data being transferred, as well as headers for each of the protocol layers..." [A2, page 12, lines 9-12] "Selection of fast-path candidates is based on whether the host may benefit from this message connection being handled by the CPD, which includes determining whether the packet has header bytes denoting particular protocols, such as TCP/IP..." [A3, page 7, lines 13-14] "When a frame is received by the INIC, it must verify it completely before it even determines whether it belongs to one of its TCBs or not. This includes all header validation (is it IP, IPV4 or V6, is the IP header checksum correct, is the TCP checksum correct, etc)."
44. The method of claim 41, including prior to receiving the packet, allocating the target buffer for a plurality of packets, and notifying the network interface of the allocated target buffer.	[A2, page 15, lines 1-5] Prior to receiving the "subsequent packet" as set forth on page 15, the "initial packet" is received. [A2, page 14, lines 16-28] The host uses the "initial packet" to "to create a connection context for the message, including finding and reserving a ***destination*** for the data from the message associated with the packet, the context taking the form of a CCB..."

	[A2, page 14, line 18] "The CCB is then sent to the CPD 30 to be saved in cache 62...". [A3, page 8, lines 9-12] "When this small amount of data is passed up to the client, and it returns with the address in which to put the remainder of the data, our host transport driver will pass that address to the INIC which will DMA the remainder of the data into its final destination." [A3, page 21, lines 14-47] "As soon as the INIC has received a segment containing a NETBIOS header, it will forward it up to the TCP driver, along with the NETBIOS length from the header.... On receiving the indicated packet, the ATCP driver will call the receive handler registered by the TDI client for the connection, passing the actual size of the data in the packet from the INIC as "bytes indicated" and the NETBIOS length as "bytes available"... In the "large data input" case, where "bytes available" exceeds the packet length, the TDI client will then provide an MDL... The ATCP driver will build a "receive request" from the MDL information, and pass this to the INIC. This request will contain:... A list of physical addresses corresponding to the MDL pages."
45. The method of claim 41,	
wherein the network interface is coupled to a network medium supporting a maximum packet size,	[A2, page 11, lines 14-18] "A large TCP/IP message ... may be received by the host ...in a number of separate, approximately 64 KB transfers, each of which may be split into many, approximately 1.5 KB frames or packets for transmission over a network." [A3, page 6] The figure shows the INIC coupled to the Ethernet network. [A3, page 2, line 37] "Ethernet (1500 byte MTU)."
and including transmitting a request from an application for transfer of a block of data from the data source, the block of data having a length potentially greater than the maximum packet size for the medium.	[A2, page 29, line 20 through page 30, line 14] SMB is an application. An SMB read "request" to read a "100KB file" is transmitted from INIC 150 to server 290. Server 290 (INIC 200 of server 290) sends the 100 KB file back to INIC 150 as multiple "packets". [A3, page 2, lines 36-37] "A 64k SMB request (write or read-reply) is typically made up of 44 TCP segments when running over Ethernet (1500 byte MTU)." [A3, page 4, line 37] "a single 64k SMB write is broken down into 44 1500 byte TCP segments, which are in turn broken down into 131 576 byte IP fragments."
46. The method of claim 45,	
including notifying the network interface in response to the request of the TCB for the block of data according to the multi-layer network protocol,	[A2, page 14, line 14 through page 15, line 3] The first packet received is sent "to the host protocol stack 44 for processing. Host stack 44 may use this packet to create a connection context for the message...the context taking the form of a CCB...The CCB is then sent to the CPD 30 to be saved in cache 62."
and wherein the step of receiving the packet includes identifying packet using the TCB.	[A2, page 15, lines 4-14] When "a subsequent packet from the same connection as the initial packet" is received, the receiving INIC checks "for a match between the hash and each CCB that is stored in the cache 62 and, finding a match..." [A2, page 24, lines 7-9] "A TCP/IP...message has a connection that is set up from which a CCB is formed by the driver and passed to the INIC for matching with and guiding the fast-path packet to the connection destination 168".
47. The method of claim 44,	
wherein the network protocol comprises TCP/IP, and the TCB includes a sequence number from the plurality of packets to be stored in the target buffer.	[A3, page 6, lines 38-41] "A TCB is a structure that contains the entire context associated with a connection. This includes the source and destination IP addresses and source and destination TCP ports that define the connection. It also contains information about the connection itself such as the current send and receive sequence numbers."
48. The method of claim 45,	
wherein the TCB includes a sequence number for the block of data.	[A3, page 6, lines 38-41] "A TCB is a structure that contains the entire context associated with a connection. This includes the source and destination IP addresses and source and destination TCP ports that define the connection. It also contains information about the connection itself such as the current send and receive sequence numbers."

49. The method of claim 48, wherein the TCB includes IP source and destination addresses and TCP port numbers.	[A3, page 6, lines 38-41] "A TCB is a structure that contains the entire context associated with a connection. This includes the source and destination IP addresses and source and destination TCP ports that define the connection. It also contains information about the connection itself such as the current send and receive sequence numbers."

V. Claim Status

The Office communication states:

5. The applicant should submit a new set of claims that show the status of each claims, i.e. original, withdrawn, canceled, etc.

The Amendment to the Claims shows the status of each claim. As discussed above, claims 23-40 and 50-59 have been canceled and claims 41-49 are pending, of which claims 45- 48 are currently amended.

VI. Conclusion

Applicants appreciate the Office acknowledgement that applicants requested an interference with the '683 patent on June 12, 2002. Applicants have responded to each of the items in the Office communication, and again respectfully request that an interference with the '683 patent be declared.

Respectfully submitted,

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